

REMARKS

Claims 1-38 remain pending in this application. Further reconsideration of this application is requested.

Election of Species

Further reconsideration of the continued withdrawal from consideration of claims 10, 11 and 15 as allegedly being directed to non-elected species again is respectfully requested. Contrary to the Office action, the elected species of Fig. 4 in fact does disclose a truss unit 26 having leg members, and a core that has an open cell foam 29. See Fig. 4.

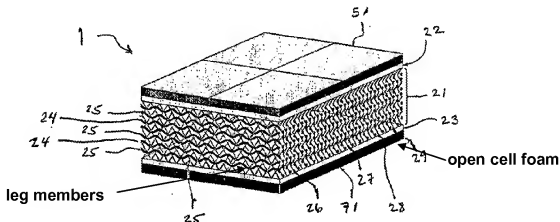


FIG. 4

While the Office action alleges that “nothing in Fig. 4 has been described as a leg member,” it is apparent from Fig. 4 itself that the truss unit 26 in fact contains leg members, shown as diagonally extending members that extend from a common point. It is well-established that the drawings are part of the written description of a patent application and may alone provide a “written description” of an invention. See Vas-Cath Inc. v. Mahurkar, 935 F.2d 1555, 19 USPQ2d 1111 (Fed. Cir. 1991). Further, the Office action does not dispute that an open cell foam 29 is shown in Fig. 4. Accordingly, the restriction of claim 15 is improper on the record. Further reconsideration and reinstatement of claims 10, 11 and 15 is requested in view of the above. In any event, rejoinder of claims 10, 11 and 15 would be indicated upon allowance of the generic claim.

New Matter Objection

Further reconsideration of the continued objection to the amendment to the specification filed October 13, 2006 as introducing prohibited new matter into the specification is requested. The Office action alleges that the phrase "or any combination thereof" is unsupported by the application as originally filed, in reference to the structure of the core 21 as containing a truss layer 26, textile layer 27, aperture sheet 28, and/or open cell foam 29.

The application as originally filed in fact teaches in paragraph 0015 as published that the "core . . . can be a variety of forms and exist as a combination or sub-combination as disclosed through out this document." The Office action asserts "this is not the same as 'any combination thereof,'" but does not explain the basis for any distinction between these terms. The disclosure that the core component can be a variety of forms and exist as a combination or sub-combination of elements means that the core may be formed of one or more of a truss layer, textile layer, perforated or aperture sheet and/or open cell foam, in combination or in sub-combination.

Thus, as originally disclosed, a combination of all forms would include each of the truss layer, textile layer, perforated or aperture sheet and open cell foam, in combination; while a sub-combination would include less than all disclosed forms. Thus, one sub-combination could include a truss layer and a textile layer, a second sub-combination could include a truss layer and an aperture sheet, a third sub-combination could include a truss layer, textile layer and aperture sheet, and a fourth sub-combination could include a textile layer, aperture sheet and open cell foam. As such, it is evident to those having skill in the art from the specification as originally filed that the core 21 could include any combination of the various core components as disclosed. Consequently, no new matter is added by the phrase "or any combination thereof" because such was already understood by those skilled in the art from the original disclosure teaching that the core could be comprised of a variety of forms and exist as a combination or sub-combination. As the disclosed "combination" or "sub-combination" was not limited to any specific combination or any specific sub-combination, it is apparent then that any combination of core forms could be used as originally disclosed,

and was contemplated at the time of the invention. Reconsideration and withdrawal of this objection again is earnestly requested in view of the above.

Rejection over Brown et al.

Further reconsideration of the maintained rejection of claims 1, 8/1, 18/1, 19/1, 20/1 and 26 as being anticipated by Brown et al., U.S. Patent No. 4,529,640, is requested.

Brown discloses a composite armor structure having a layer of hard steel 12, an aluminum alloy sheet 22, a paper honeycomb spacer 20, and a ballistic woven fabric layer 18. The Office action improperly interprets ballistic layer 18 as corresponding to both the claimed bottom face sheet and the claimed fragment catching layer. This interpretation violates the Doctrine Against Double Inclusion, which prohibits a single element of the prior art from being applied to separately claimed elements that are separately disclosed in an application. See, e.g., Ex parte Kristensen, 10 USPQ2d 1701 (Bd. Pat. App. & Inter. 1989) (where a claim directed to a device can be read to include the same element twice, the claim may be indefinite).

The Office action asserts in response that “one” of the “multiple layers” of ballistic fabric 18 would be the “bottom face sheet” and “the other” of which would be the “fragment catching layer.” Such interpretation is improper, however, because Brown does not disclose that separate plies of the fabric 18 have separate functionality as claimed. To the contrary, the multi-ply inner element 14 is disclosed as a single element, made of multiple plies of ballistic fabric 18 impregnated in a resin matrix, such as an epoxy, polyester, or polyvinyl butyl resin matrix. Col. 2, ll. 12-16. As such, the element 14 for all intents and purposes is disclosed as a single layer. There is no basis in Brown from which one skilled in the art would discriminate individual plies of the single impregnated resin matrix of woven fabric 18. In contrast, the claimed invention requires a separately identifiable bottom face sheet and fragment catching layer.

Here, the bottom face sheet as claimed is disclosed as face sheet 23, and the fragment catching layer as claimed is disclosed as separate ballistic layer 71. Consequently, the single element 14 of Brown cannot properly be construed to correspond to the two separate claim limitations of a bottom face sheet and a fragment

catching layer as set forth in claims 1 and 26. Accordingly, this ground of rejection is improper and should be withdrawn.

Rejection over Groves

Further reconsideration of the rejection of claims 1-9, 12-14, 16, 18-21 and 23-38 as being anticipated by Groves, U.S. Patent No. 5,110,661, also is respectfully requested.

Groves discloses a body armor structure made of an outer bullet-trapping component 11 and an inner impact spreading component 12. Thus, contrary to the position of the Office action, Kevlar layers 31 of inner component 12 do not function as the claimed projectile arresting layer, as any incoming projectile is already arrested by outer component 11. The Office action conjectures that the inner layer 12 "would act as a projectile arresting layer to any incoming projectile that makes it through outer layer 11," reasoning that if layer 11 stopped all incoming projectiles, there would be no point to having second layer 12. This is incorrect, as Groves explicitly teaches that inner layer 12 is provided for the purpose of "spreading the impact of the bullet being trapped in the outer component 11." See col. 6, line 67 – col. 7, line 1 (emphasis added). Groves further explicitly teaches that "the outer component 11, which forms the bullet trap, may be used separate from the particular disclosed inner component ...", col. 3, ll. 7-9. Groves nowhere discloses that inner component 12 could perform the function of a projectile arresting layer and thus the interpretation of inner component 12 as having such function is unfounded.

Further, bottom multilayer 33 also of Kevlar cannot correspond to the separately claimed bottom face sheet and fragment catching layer. Groves teaches that multiple sheets of Kevlar cloth 33 as provided form a single functional inner layer 28, see col. 7, ll. 9-12. Groves does not disclose that one of the sheets of layer 28 functions as a face sheet while other sheets function as a fragment catching layer. Simply because the inner layer 28 is made up of a plurality of sheets of material, does not mean that the sheets have separate functionality. Groves teaches that the inner layer 28 of inner component 12 is made of four sheets of a high impact-resistant material. There is no basis in Groves for discriminating one of the sheets 33 as a bottom face sheet coupled to a fragment catching layer.

Further still, Groves fails to disclose an open cell core structure as claimed. The core 30 is disclosed as including two layers 34 and 35, each of which includes a plurality of closely-packed, closed chambers or domes 42 and 43. The domes 42 and 43 have their bases fixed to intermediate layer 36 and their tops in contact with outer layer 27. See col. 7, ll.12-31. The closed domes 42 contain plastic spheres 46, while the interstitial spaces between closed domes 43 contain plastic spheres 47. These structures do not correspond to an open cell core structure as required by the present claims.

The Office action states that "open dome shaped cells" 34 and 35 are relied on as meeting the claimed "open cell core structure." Groves, however, discloses that each layer 34 and 35 includes a plurality of closely packed chambers or compartments 42, col. 7, ll. 12-16; 24-26, with bases in contact with intermediate layer 36 and inner layer 28. The domes are thus closed domes, and are not open cells as claimed. The Office action asserts that it would not be possible to fill a core with particles if it were not an open cell core. This statement does not show that the closed domes 42 and 43 constitute an open cell core structure as claimed. The claimed structure is an open cell structure. Even if domes 42 and 43 at one point during the manufacture of the Groves armor component could be considered "open" in the sense that they are subsequently filled with particles 46, 47 and then are closed by being attached to layers 36 and 28, the fact remains that the manufactured armor component as disclosed contains closed chambers 42 and 43, while the claimed structure requires an open cell core. The closed, filled chambers are not open cell core structures as claimed.

For all of the foregoing reasons, as well as the fact that Groves fails to disclose the various features set forth in the dependent claims, it is submitted that Groves fails to anticipate any of claims 1-9, 12-14, 16, 18-21 or 23-38.

Rejection over Groves and Tippet

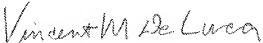
The rejection of claims 17 and 22 as being unpatentable over the proposed combination of Groves with Tippet, US Pub. No. 2001/0030023, also is respectfully traversed. The composite expansion joint material of Tippet is simply irrelevant to the claimed invention and irrelevant to Groves. One of ordinary skill in the art would not

attempt to modify the Groves armor to include a material disclosed by Tippet as useful in an expansion joint. In any event, Tippet fails to cure the deficiency of Groves as demonstrated above with respect to the independent claims from which claims 17 and 22 depend, and thus no combination of Tippet with Groves could result in the invention of claim 17 or claim 22.

Conclusion

In view of the foregoing, claims 1 - 38 are submitted to define patentable subject matter over the prior art of record. Favorable reconsideration and the issuance of a Notice of Allowance are earnestly solicited.

Please charge any fee or credit any overpayment pursuant to 37 CFR 1.16 or 1.17 to Novak Druce Deposit Account No. 14-1437.

RESPECTFULLY SUBMITTED,					
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